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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/763,009

04/04/2001

Sabah Badri

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12/01/2005

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---|--------------|--|
| Office Action Summary | Application No. <input checked="" type="checkbox"/> | Applicant(s) | |
| | 09/763,009 | BADRI ET AL. | |
| | Examiner | Art Unit | |
| | Kevin M. Burd | 2631 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38 is/are allowed.
- 6) ☒ Claim(s) 1, 11, 12, 20-23, 25, 27 and 30 is/are rejected.
- 7) ☒ Claim(s) 2-4, 7-10, 13-19, 24, 26, 28, 29 and 31-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment filed 9/28/2005, is a non-final amendment.

Response to Amendment

2. The drawings were received on 9/28/2005. These drawings are accepted and overcome the previous objection.
3. The objection to the claims for being improper multiple dependent claims was made in error and is withdrawn.
4. The objections to the claims because of informalities are withdrawn except for the objection to claim 31. That objection is maintained.

Response to Arguments

5. The rejections and objections of claims 2-4, 7-10, 13-19, 26, 28, 29, 31-37 have been withdrawn.
6. Applicant's arguments with respect to claims 1, 11, 12, 20-23, 25, 27 and 30 have been considered but are moot in view of the new ground of rejection.

Specification

7. The disclosure is objected to because of the following informalities: numerous run-on sentences appear in the specification in pages 6-9. Appropriate correction is required.

Claim Objections

8. Claim 31 is objected to because of the following informalities: In claim 31, line 4, the term "eath" is stated and should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 11, 12, 20-23, 25, 27 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Segal et al (US 6,647,069).

Regarding claims 1 and 20, Segal discloses a method and transmitter for transmitting information symbols using a plurality of carriers (column 8, lines 37-60). Figures 10 and 11 show data bits being transmitted on separate carriers and at separate times (column 8, lines 53-60). The symbols are different from one another as shown in figures 12A and 12B. Each of the constellation points are on a signal constellation diagram having a predefined number of different states and the symbols comprise different states as shown in figures 12A and 12B. In 16QAM constellations, each point will have different amplitude and phase states with respect to the other points.

Regarding claims 11 and 30, Segal discloses a method and transmitter for transmitting information symbols using a plurality of carriers (column 8, lines 37-60). Figures 10 and 11 show data bits being transmitted on separate carriers and at separate times (column 8, lines 53-60). The symbols are different from one another as shown in figures 12A and 12B. Each of the constellation points are on a signal constellation diagram having a predefined number of different states and the symbols comprise different states as shown in figures 12A and 12B. In 16QAM constellations, each point will have different amplitude and phase states with respect to the other points. The receiver shown in figure 4 will receive these transmitted symbols, demodulate the symbols and recover the original information symbols (figure 4).

Regarding claims 12 and 21, the carriers are different from one another (column 8, lines 44-46).

Regarding claim 22, data is grouped into information symbols. Figure 11 shows 16QAM is used for transmission. Figure 14 shows an example of the mapping scheme comprising 4 bits per symbol.

Regarding claim 23, figure 10 shows a plurality of paths utilizing a plurality of channels. Each of these channels will utilize its own modulation scheme.

Regarding claim 25, each of the transmitted symbols has a point in the constellation and each point in the constellation is assigned a phase value.

Regarding claim 27, Receiver 411 comprises a matched filter, which performs a convolution of a square-root raised cosine filter (column 5, 45-50). This convolution will also take place in the transmitter, in the square-root raised-cosine filter 408.

Allowable Subject Matter

10. Claim 38 is allowed.
11. Claims 2-4, 7-10, 13-19, 24, 26, 28, 29 and 31-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
11/29/2005


KEVIN BURD
PRIMARY EXAMINER